

m/001/045

**Decision Record / Finding of No Significant Impact**

Ruby Violet Project  
EA Number UT-044-99-14

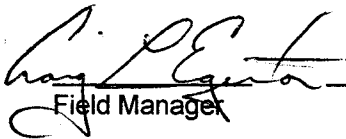
Finding of No Significant Impact: Based on the analysis of potential environmental impacts contained in the attached environmental assessment, I have determined that impacts from the proposed action are not expected to be significant and an environmental impact statement is not required.

Decision: It is my decision to authorize the proposed action as described in the attached environmental assessment report. No mitigation measures were identified.

Rationale for Decision: The decision to allow the proposed action does not result in any undue or unnecessary environmental degradation and is in conformance with the Pinyon Management Framework Plan approved June 10, 1983. The proposed action was chosen because the project will have a positive impact to the local economy, and environmental consequences were not determined to be at a level which would prohibit the action.

Compliance/Monitoring

The area will be monitored at least once a year to determine compliance with this document.

 03/03/99  
Field Manager Date

## I. INTRODUCTION

### Need for the Proposed Action

Red beryl (bixbite) is the extremely rare, ruby-red variety of the mineral beryl. Bixbite has been found in only two locations in the world, both in the western United States. Only one of these, the subject site, has a sufficient quantity of high-quality, gem and specimen grade crystals to allow profitable commercial exploitation. The value that modern society places on the recovery of such crystals is reflected in their current market value of up to \$2,000 per carat. The current resource at the Ruby Violet deposit is estimated to be capable of supplying a global trade of over 25,000 carats of gem grade beryl per year for 20 years (Neary Resources Corp., 1999). The proposed action intends to extract the red beryl crystals from natural occurrences on Federal lands.

Consistent with section 2 of the Mining and Policy Act of 1970 and section 102(a)(7), (8), and (12) of the Federal Land Policy and Management Act, it is the policy of the Department of the Interior to encourage the development of Federal mineral resources and reclamation of disturbed lands. Under the mining laws a person has statutory right, consistent with Departmental regulations, to go upon the open Federal lands for the purpose of mineral prospecting, exploration, development, extraction, and uses reasonable incident thereto.

### Conformance with Land Use Plan

The proposed action has been reviewed for conformance with the Pinyon Management Framework Plan (MFP), approved June 10, 1983. Although this action is not specifically mentioned in the plan, the proposed action would be clearly consistent with the terms, conditions, and decisions of the MFP. There are no resource conflicts identified in the MFP in the area of the proposed action.

### Conformance with Statutes, Regulations, or other Plans

The proposed action has been reviewed in light of the Utah Standards for Rangeland Health. Although in the short-term the proposal would not support the standards, the long-term result would not degrade any of the resources described in the standards.

## II. PROPOSED ACTION AND ALTERNATIVE

### Proposed Action

Gemstone Mining Inc. has submitted a plan to recover red beryl gemstones from a natural occurrence of the gemstones located on a mountainside in the southern Wah Wah Mountains, about one-mile north of Bumblebee Mountain. The planned operation would be entirely on Federally managed (BLM) lands. The red beryl crystals occur within an altered rhyolite flow; prior surface mining operations, underground test mining, exploration core holes, and extensive surface geologic studies have defined an economically recoverable ore body. The proposal submitted entails the reactivation and expansion of two existing open pit areas and associated waste dumps, and the establishment of a processing/sorting plant adjacent to the mine site. The site would be accessed by pre-existing County-maintained and BLM roads. A total of about 52 acres of land would be impacted directly by the proposal; 43 acres would be associated with the open pit mine, waste dumps, and mine to plant haul road, and 9 acres for the processing plant. The projected mine life is 12+ years.

The altered rhyolite rock containing the red beryl crystals (ore) would be recovered by highly selective, small-scale surface mining methods. Salvageable topsoil within all areas proposed for disturbance would be salvaged and stockpiled. Pinyon-juniper woodland within the disturbed area would be purchased as fuelwood by the operator. Overburden rock would be removed and the ore typically would be excavated by use of a hydraulic excavator/track hoe. Drilling and blasting would be used on an as-needed basis to lightly fracture and loosen in-place material that is too competent to excavate via the excavator. The ore would be hauled directly to the mine site processing plant, located about 0.25 miles from the mine. At the processing plant, the ore would be crushed, sized, washed with water, and conveyed over slow moving conveyor belts for visual inspection and sorting for the contained red beryl crystals. No chemicals would be used in the processing plant, except for a flocculent which would be added to the plant wash water to accelerate settling of clay particles and allow recycling of the process wash water. No process water would be discarded from the site. No hazardous materials would be used or generated at the mine or processing plant site.

Water for plant processing, sanitary use, and dust control would be conveyed via a buried 3" plastic pipeline from a company-drilled well to be located in Sec. 10, T. 29 S., R. 14 W. The well and water line would be covered by a separately applied for right-of-way and analyzed in a separate environmental assessment. The water line right-of-way would contain stipulations guaranteeing the operator use of up to 10 acre-feet of water from a BLM held water right, for as long as the operation is active.

Waste rock/overburden generated by the mining operations would be placed in part in a valley-fill type waste dump and in part backfilled into one of the mined out pits. Reject material from the processing plant would be back hauled to the waste dump for disposal. Noxious weeds on disturbed areas would be controlled by methods specified by the BLM. The plant and mine will operate 5 days/week, year-round. Employment for the mine/mill is expected to be 42 employees. Workers would commute to the site via existing County and company-maintained roads. While no changes in the existing access roads are proposed in the plan, Beaver County has applied for a right of way for a 66 foot wide, 14.5 mile section of the access road (from the intersection of the Blue Mountain Road and Jockey Road located near the top-center of Sec. 18, T. 30 S., R. 12 W., to the mine gate located near the center of Sec. 29, T. 29 S., R. 14 W.).

Reclamation of waste dumps and pit areas would be accomplished by compaction and regrading of the loose waste material to slopes not exceeding 21°. Remaining pit highwalls would be benched to not greater than 51° slopes, and the benched areas hydro-mulched/topsoiled, and hydro-seeded. Topsoil would be placed at the rate of 20 tons/acre, and erosion control structures created on the re-contoured areas. All topsoiled areas would be seeded with a seed mix as specified by BLM. Seeding would not be considered successful until a stable vegetative cover of 70% of the pre-

disturbance cover was obtained. Pit highwalls that are visible from a distance, because of the light color of the broken rock, would be treated with a commercially available rock coloring to make them less visible.

Reclamation of the processing plant site would involve demolition and/or removal of all surface structures and facilities. Concrete building foundations would be broken up and buried on site. All disturbed areas would be re-contoured to a slope not to exceed 21°, topsoiled at the rate of 20 tons/acre, and hydro-seeded.

The proposed mine and processing plant would be permitted with all necessary Federal and State agencies. Gemstone Mining Inc., or any other company obtaining the permit, would comply with all Federal, State and local laws.

If the operation were obtained by a company other than Gemstone Mining Inc., the operational procedures and timing may vary from those stated in this document. If changes were proposed which would alter the environmental impacts from those stated in this environmental assessment, a new environmental assessment would be completed.

#### No Action Alternative

Under this alternative, the mine plan as submitted would be denied. The red beryl crystals to be produced by the project would not be available for trade in the domestic and international gemstone markets.

### III. AFFECTED ENVIRONMENT

The proposed mining operation would be located in the southern section of the Wah Wah Mountains, a north-south trending mountain range that is part of the Basin and Range Province of southwestern Utah. The nearest community is Milford, Utah, about 35 road miles distant to the east-northeast. Elevations for the lands proposed to be disturbed range from approximately 6400 to 7000 feet above sea level.

Current land use is predominantly mineral exploration, fuelwood gathering, and livestock grazing. The mining site has been heavily impacted by prior red beryl exploration and mining efforts which date back to 1940's. Prior mining related disturbances, that are currently covered by State and Federal mining regulations encompass about 15 acres.

Critical elements of the human environment which are not present in the area or are not anticipated to be impacted by the proposed action are itemized below.

#### CRITICAL ELEMENTS

<u>Critical Element</u>	<u>Affected</u>	
	<u>Yes</u>	<u>No</u>
Air Quality		X
ACECs		X
Cultural Resources		X
Environmental Justice		X
Farmlands, Prime/Unique		X
Floodplains		X
Native American Religious Concerns		X
Native American Trust Rights		X
T & E Species		X
Wastes, Hazardous/Solid		X
Water Quality		X
Wetlands/Riparian Zones		X
Wild & Scenic Rivers		X
Wilderness		X

Any air quality impacts would be mitigated by the dust control measures described in the proposed plan, to include the use of water sprays to be applied to the mining faces and haul roads. A cultural resource inventory has been completed. No sites were identified which might be eligible for inclusion on the National Register of Historic Places. Wastes would be disposed of in accordance with existing regulations. There are no Areas of Critical Environmental Concern (ACECs), farmlands, floodplains, Native American religious concerns, surface waters, or wilderness areas in the immediate area of the proposed action.

No ground water has been encountered in any of the exploration holes drilled to date in and adjacent to the proposed pits and dumps. Ground water in the vicinity of the proposed pit and dump disturbances is therefore known to be at least 600' below the proposed pit bottoms based on the depth of these exploration holes. Acid production potential tests have been made on representative samples of the host rhyolite rock, and the rock has a net acid consuming ability. Trace element analysis of the host rock shows that concentrations of potentially toxic elements are within the background range. The lack of any primary sulfide mineralization in the rock to be extracted, the neutral pH of the ore and waste rock, and the arid environmental conditions effectively preclude any possibility for acid mine generation on the waste dumps or in the pits.

The area is in a Visual Resource Management (VRM) Class IV area. This class allows for noticeable changes in the landscape. Visual resources would be affected until reclamation is complete. These changes would be within allowable limits and will consequently not be discussed further in this document.

Resources which would be impacted and could not be completely mitigated include minerals and wildlife.

#### Minerals

The southern Wah Wah Mountains are geologically complex with formations ranging from Cambrian quartzites to late Tertiary volcanics. Minerals which have been found in the southern Wah Wah Mountains include molybdenum, tungsten, iron, alunite, kaolin, sulfur, mercury, uranium, and fluorite. Extensive exploration for precious and other metals has occurred, but this exploration has not lead to any producing mines. The proposed plan area is located in rhyolite and altered rhyolite, which is overlain by basalt. Topaz, bixbyite, and bixbite (red beryl) crystals are found in the rhyolites.

The proposed action would excavate several million tons of waste rock overburden and beryl-containing ore rock. Only the beryl crystals would be removed from the plan area. Waste rock and processed ore rock would be left at the mine site and regraded, stabilized, and revegetated.

#### Wildlife

No threatened or endangered animal species are known to occur on the mine site, although two species may be present in the general area at certain times of the year. Bald eagles are present in very low numbers in the West Desert valleys, including Wah Wah Valley, during the winter months (Nov-Feb). An eagle may occasionally fly over the mine site while hunting or traveling to roost sites. Peregrine falcons migrate through the West Desert in the fall and spring and occasionally fly over the mine site.

Other species of concern in the general area include the ferruginous hawk and burrowing owl, both state sensitive species that sometimes nest in the valley. Mule deer are year-long residents of the Wah Wah Mountains and a few occur in the vicinity of the mine site. Pronghorn are year-long residents of the Wah Wah valley in low numbers.

#### IV. ENVIRONMENTAL IMPACTS

##### Proposed Action

##### Minerals

##### Direct and Indirect Impacts

About 11,500,000 grams (58,000,000 carats) of gem, specimen, and lesser-grade red beryl crystals would be permanently removed from public land. About 1.6 million tons of beryl-containing ore rock and associated waste rock overburden would be excavated over the life of the plan, of which about 500,000 tons would be processed at the plant site. All pit run waste rock and processed rock tailings would be disposed of on site within waste dumps and mined-out pit areas. The local topography would be altered both by the creation and expansion of open pits and by the disposal of the waste rock. Up to 52 acres of public land would be completely disturbed for the 12 years of projected mine life.

##### Cumulative Impacts

The proposed mine operation is the only active mining operation for a radius of over ten miles from the project area. Exploration for a variety of known and potential mineral resources can be expected to occur into the foreseeable future in the vicinity of the project area.

##### Wildlife

##### Direct and Indirect Impacts

Development of this mine and associated facilities would not have any affect on threatened and endangered species or state sensitive animal species. Development would result in the loss of about 40 acres of wildlife habitat for 20 years. This habitat is primarily pinyon and juniper which is used by a limited number of wildlife species. Some of this habitat has already been disturbed. Mule deer that presently occur in the mine area are likely to be displaced while the mine is in operation.

##### Cumulative

There would be little impact to wildlife from this project. The displacement of animals from the disturbance area would be a short term impact as most species would adjust to the loss of habitat. This project is cumulative to other habitat disturbing activities in the area such as mineral exploration, livestock grazing, and recreation. Cumulative impacts would not be anticipated to be major in the near future.

##### Alternative 1 - No Action

Under the no action alternative none of the resources mentioned above would be impacted in this area. The red beryl resource present on the Federally managed lands would not be recovered.

##### Mitigation Measures

No mitigation measures were identified.

## V. PERSONS OR AGENCIES CONSULTED

Clint Christensen, Project Manager, Gemstone Mining Inc.  
Gordon Austin, Mining and Gemstone Consultant, GORYLL-AZ  
Tom Munson, State of Utah, Division of Oil, Gas, and Mining

## VI. LIST OF PREPARERS

Ed Ginouves - Mining Engineer, CCFO. Project leader. Contributed information pertaining to minerals resources.

Gus Warr- Rangeland Management Specialist, CCFO. Contributed information pertaining to wild horses.

Steve Hedges - Wildlife Biologist, CCFO. Contributed information pertaining to wildlife resources, threatened and endangered animal species and riparian/wetland resources.

Bob Edwards - Natural Resource Specialist, CCFO. Contributed information pertaining to ACEC's, soils, air quality, flood plains, prescribed burn evaluations, recreation, threatened and endangered plants, hazardous waste, visual resources, water quality, water rights, wild and scenic rivers, wilderness and woodland.

Ervin Larsen - Realty Specialist, CCFO. Contributed information pertaining to land status, rights-of-way, and solid waste.

Joseph Jenson - Rangeland Management Specialist, CCFO. Contributed information pertaining to rangeland resources and grazing.

## VII. REFERENCES

Cipriani, Curzio, and Borelli, Alessandro, 1986, Bixbite, *in* Guide to Gems and Precious Stones, p. 148, Simon & Schulster, Inc., New York.

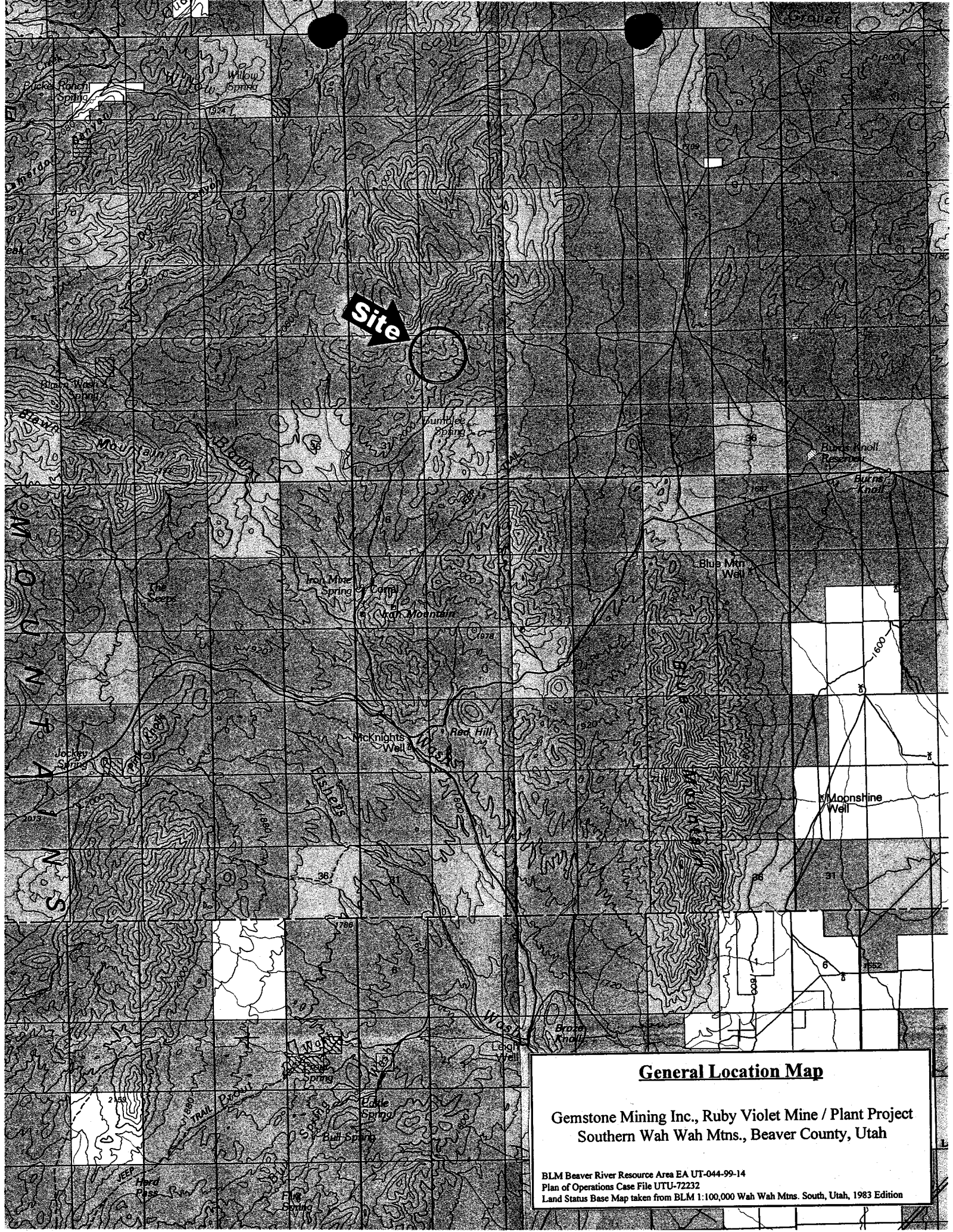
Neary Resources Corporation, 1999, Rare Gemstones Command Top Prices; Neary Resources Webpage, <http://www.nearyresources.com/topprice.html>.

Pack, Gina, 1995, Ruby Violet Plan of Operations Environmental Assessment, EA UT-044-95-58, dated 10/16/95, in case file UTU-72232, Part I., BLM Cedar City District Files, Cedar City, Utah.

## VIII. ATTACHMENTS

1. General Project Location Map.
2. Topographic Map of Mine and Plant Site
3. Project Checklist.
4. Wildlife Technical Report.





### General Location Map

Gemstone Mining Inc., Ruby Violet Mine / Plant Project  
Southern Wah Wah Mtns., Beaver County, Utah

BLM Beaver River Resource Area EA UT-044-99-14  
Plan of Operations Case File UTU-72232  
Land Status Base Map taken from BLM 1:100,000 Wah Wah Mtns. South, Utah, 1983 Edition

